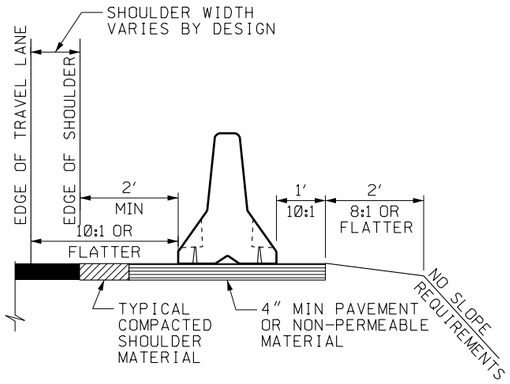
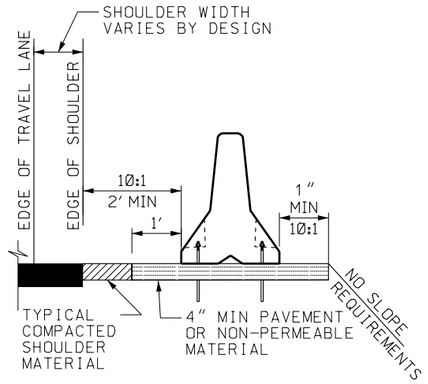


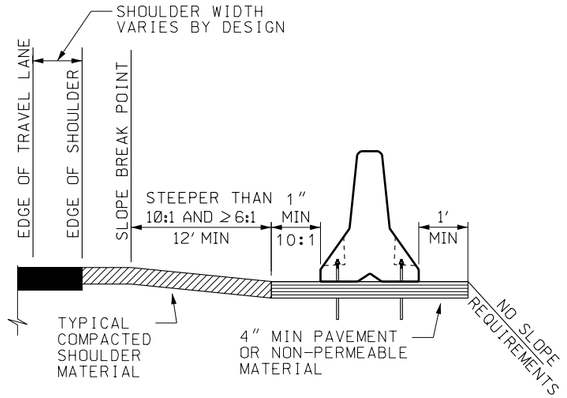
SHOULDER INSTALLATION OPTION 1

NO STABILIZATION PINS REQUIRED



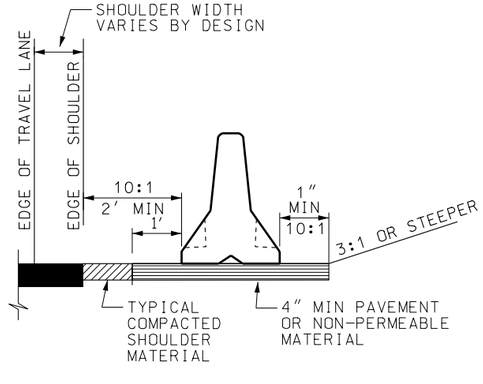
SHOULDER INSTALLATION OPTION 2

STABILIZATION PINS REQUIRED



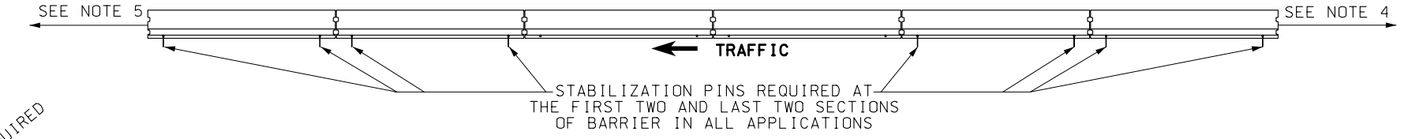
SHOULDER INSTALLATION OPTION 3

STABILIZATION PINS REQUIRED



SHOULDER INSTALLATION WITH 3:1 OR STEEPER BACKSLOPE

NO STABILIZATION PINS REQUIRED



FORMULAS FOR LENGTH OF NEED CALCULATIONS BURIED IN TERMINAL SECTION ONLY

BACKSLOPE STEEPER THAN 3:1

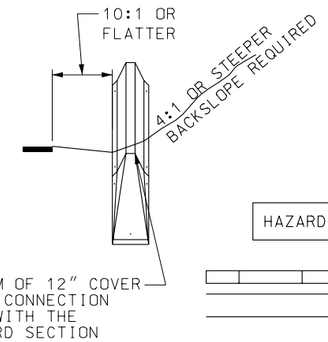
LON= FLR x D1

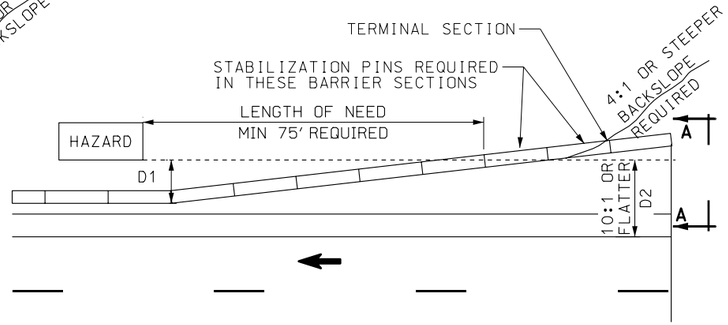
BACKSLOPE 3:1 TO A MINIMUM 4:1

≥ 50 MPH "LON"= 450 – (15 x D2)
≤ 45 MPH "LON"= 250 – (15 x D2)

LON: LENGTH OF NEED
FLR: BARRIER FLARE RATE
D1: DISTANCE FROM FACE OF BARRIER TO FACE OF HAZARD OR DITCH BOTTOM
D2: DISTANCE FROM EDGE OF TRAVEL LANE TO FACE OF HAZARD OR DITCH BOTTOM

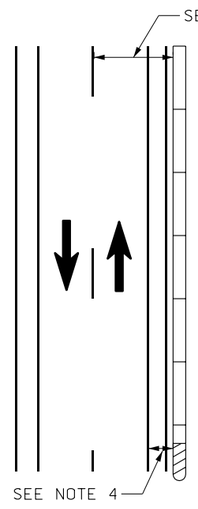
SECTION A–A



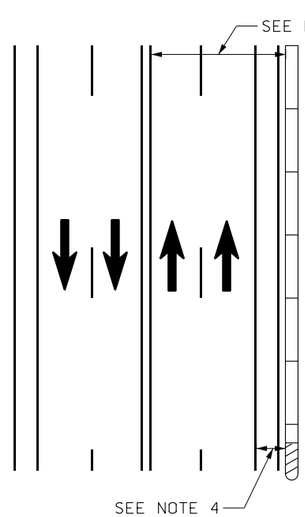


NOTES:

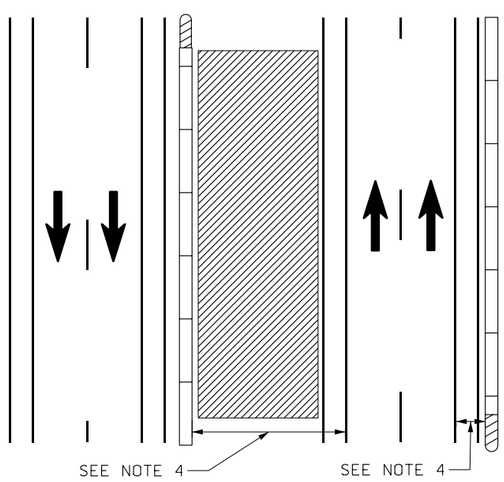
1. USE REQUIRED CLEAR ZONE FROM THE ROADSIDE DESIGN GUIDE, CURRENT EDITION. USE APPROPRIATE FLARE RATE AS SUGGESTED IN ROADSIDE GUIDE, CURRENT EDITION, FOR RIGID BARRIER SYSTEMS, WHEN BARRIER IS PLACED WITH A FLARE.
2. PLACE BARRIER ON A 4″ PAVED OR NON-PERMEABLE SURFACE.
3. PIN ALL BARRIER SECTIONS TOGETHER AT CONNECTION LOOPS.
4. INSTALL APPROPRIATE CRASH CUSHION WHEN BARRIER END IS WITHIN 1.2 TIMES REQUIRED AASHTO CLEAR ZONE AND THE DESIGN SPEED IS GREATER THAN 40 MPH. TERMINAL SECTION (STD DWG BA 1C) USE PERMITTED FOR APPROACH TRAFFIC WHEN THE DESIGN SPEED FOR ROADWAY IS 40 MPH OR LESS. INSTALL TERMINAL SECTION (STD DWG BA 1C) WHEN THE APPROACH BARRIER END IS OUTSIDE 1.2 TIMES THE REQUIRED AASHTO CLEAR ZONE.
5. INSTALL APPROPRIATE CRASH CUSHION ON TRAILING END OF BARRIER WHEN BARRIER END IS WITHIN REQUIRED AASHTO CLEAR ZONE, AND THE DESIGN SPEED IS GREATER THAN 40 MPH. INSTALL TERMINAL SECTION (STD DWG BA 1C) WHEN BARRIER END IS OUTSIDE THE MINIMUM REQUIRED CLEAR ZONE BUT WITHIN 1.2 TIMES MAXIMUM THE REQUIRED AASHTO CLEAR ZONE.
6. THE CONCRETE BARRIER DESIGN ALLOWS FOR A 3′ OUTWARD LATERAL MOVEMENT IF THE BARRIER IS STRUCK. STABILIZATION PINS ARE NOT REQUIRED WHEN USED ON A SHOULDER APPLICATION AND THE REQUIRED SLOPE OF 8:1 OR FLATTER EXIST 3′ BEHIND THE BARRIER. USE STABILIZATION PINS WHEN THE SLOPES ARE STEEPER THAN 8:1 AND WITHIN 3′ OF THE BARRIER BACKSIDE.
7. PRE-DRILL A 1″ HOLE THROUGH THE PAVED SURFACE PRIOR TO INSTALLING THE STABILIZATION PIN.
8. DO NOT PLACE BARRIER ON TOP OF ANY CURBING.
9. DO NOT OVERLAY ANY MATERIAL PAST THE FIRST BREAK POINT ON THE BARRIER. THE FIRST BREAK POINT IS 3″ FROM THE BOTTOM OF THE BARRIER.
10. PLACE AN ADEQUATE AMOUNT OF SILICON ADHESIVE ON THE BOTTOM WASHER OF THE CONNECTION PIN BEFORE INSERTING, TO HOLD IN PLACE AND PREVENT EASY HAND REMOVAL.



TWO LANE/TWO WAY



MULTI–LANE ARTERIAL



MULTI–LANE ARTERIAL WITH TRAVERSABLE MEDIAN

NO.	DATE	APPR.	REVISIONS	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — JAN.01.2005 DATE
CHAIRMAN STANDARDS COMMITTEE APPROVED — JAN.01.2005 DATE
DEPUTY DIRECTOR

PRECAST CONCRETE FULL SECTION SHOULDER APPLICATIONS

STANDARD DRAWING TITLE

STD DWG
BA 1E

DGN File\N:\Eng\Standard Drawings\Imperial\2005Approved\Barriers (BA)\ba81e.dgn
15-DEC-2004